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**AUG 14 2007**

### REMARKS

The present application is directed to compositions and methods for attenuation of cancer in a mammal by administering to the mammal Group B  $\beta$ -hemolytic *Streptococci* toxin receptor or Group B  $\beta$ -hemolytic *Streptococci* toxin receptor peptide. Prior to the present Response, Claims 1, 4-16, 29-38, 40-48 and 55-56 were pending. In the present Response, applicant cancels Claims 6, 7, 11-14, 29, 30, 43, 44, 47, 48, 55 and 56, amends Claims 1-5, 8-10, 15, 16, 31, 33-35, 37, 38, 40-42, 45 and 46, and adds new Claims 59-92.

The amendments do not introduce any new matter. The currently amended and the new claims are based on claims as pending prior to the present Response and are further supported by the specification as indicated below. For example, new Claims 89-92 are supported by working Examples 1-6. Claims 1, 4, 5, 8-10, 15, 16, 31, 33-38, 40-42, 45, 46 and 59-92 will be pending upon entry of the amendments.

#### *Telephone Interview*

Applicant thanks the Examiner for a telephone interview ("interview") with applicant's representatives on June 6, 2007. Potential claim amendments were discussed during the interview.

#### *Rejection of Claims under 35 U.S.C. § 112, First Paragraph (Enablement)*

In the Final Office Action mailed February 14, 2007, the Examiner maintains the rejection of Claims 1, 4-16, 30-38, 40-48, 55 and 56 under 35 U.S.C. §112, first paragraph, for lack of enablement. Applicant cancels Claims 6, 7, 11-14, 29, 30, 43, 44, 47, 48, 55 and 56, thereby rendering their rejection moot. Applicant respectfully submits that the claim amendments submitted in the present Response overcome the rejection of Claims 1, 4, 5, 8-10, 15, 16, 31, 33-38, 40-42, 45 and 46.

The Examiner disagrees with applicant's position that, in the field of cancer vaccines, mouse models are considered to correlate reasonably well with human pathological angiogenesis conditions, such as those associated with cancer. In reply to arguments by applicant submitted

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in a Response filed February 6, 2006, and supported by a Second Declaration by Dr. Carl G. Hellerqvist under 37 C.F.R. § 1.136, the Examiner notes that the claims are directed to a process for attenuating any of a very large plurality of different types of cancer, not pathological angiogenesis conditions associated with cancer. See Final Office Action, page 9, 5<sup>th</sup> paragraph. The Examiner previously refused to amend the claims to recite "attenuating pathological angiogenesis associated with cancer," asserting that the amendments introduced non-elected subject matter. See Notice of Non-Responsive Amendment mailed April 20, 2006.

In the present Response, based on the discussion during the interview, applicant amends independent Claims 1 and 35 to recite a limitation "wherein the cancer is a solid tumor cancer associated with pathological neovasculature." Support for the amendments is found throughout the specification, for example, on page 7, lines 10-12. Applicant asserts that the claim amendments overcome the rejection. Applicant notes that the new claims also recite the above limitation. Based on the foregoing, applicant respectfully requests withdrawal of the rejection under 35 U.S.C. § 112, first paragraph.

***Claim Rejections under 35 USC §112, First Paragraph (Written Description)***

The Examiner maintains the rejection of Claims 1, 4-16, 29-38, 40-48, 55 and 56 under 35 USC §112, second paragraph, as indefinite. Applicant cancels Claims 6, 7, 11-14, 29, 30, 43, 44, 47, 48, 55 and 56, thereby rendering their rejection moot. Applicant respectfully submits that the claim amendments in the present Response overcome the rejection of Claims 1, 4, 5, 8-10, 15, 16, 31, 33-38, 40-42, 45 and 46.

The Examiner disagrees with applicant's position, expressed, for example, in a Response filed February 6, 2006, that the specification provides sufficient written description for the genus of Group B  $\beta$ -hemolytic *Streptococci* (GBS) toxin receptors having an amino acid sequence substantially identical to HP59 or SP55 or immunogenic fragments thereof, by providing a description of a representative number of species, by actual reduction to practice, and by disclosure of relevant, identifying characteristics sufficient to show that applicant was in possession of the claimed genus. Applicant maintains the above position.

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However, to facilitate prosecution, applicant amends currently amended independent claims to recite "one or more Group B  $\beta$ -hemolytic *Streptococci* ("GBS") toxin receptors having an amino acid sequence of HP59 or SP55 or an amino acid sequence of HP59 or SP55 with at least one conservative amino acid substitution." Applicant further amends certain currently amended dependent claims to recite specific amino acid sequences SEQ ID NO: 2, corresponding to HP59, and SEQ ID NO: 4, corresponding to SP 55.

Applicant notes that amended claims no longer recite Group B  $\beta$ -hemolytic *Streptococci* (GBS) toxin receptor fragments. New claims recite immunogenic Group B  $\beta$ -hemolytic *Streptococci* toxin receptor peptide comprising one or more amino acid sequences selected from the group consisting of amino acid sequences for immunogenic peptides disclosed in the specification on pages 14-15. Applicant respectfully asserts that the amendments overcome the rejection of claims under 35 U.S.C. §112, first paragraph, as failing to comply with a written description requirement, and requests withdrawal of the rejection

#### ***Rejection of Claims under 35 USC §102(e)***

The Examiner maintains the rejection of Claims 29-34, 37, 38, 40-43, 45-48, 55, and 56 under 35 U.S.C. §102(e) as anticipated by U.S. Patent No. 6,803,448 to Carl G. Hellerqvist and Changlin Fu. Applicant cancels Claims 29, 30, 43, 44, 47, 48, 55 and 56, thereby rendering their rejection moot. Applicant amends into an independent form Claim 35, which the Examiner did not reject under 35 U.S.C. §102(e). Applicant amends Claims 31, 33, 37, 38, 40, 41, 45 and 46 to depend on Claim 35. Applicant asserts that these claim amendments overcome the rejection under 35 U.S.C. §102(e) and requests its withdrawal.

#### ***Obviousness-Type Double Patenting Rejection***

The Examiner rejects Claims 29-32, 38, 40-43, 45-47 and 55 over U.S. Patent No. 6,803,448 to Carl G. Hellerqvist and Changlin Fu under the doctrine of obviousness-type double patenting. Applicant cancels Claims 29, 30, 43, 44, 47, 48 and 55, thereby rendering their rejection moot. Applicant amends into an independent form Claim 35, which the Examiner did not reject under the doctrine of obviousness-type double patenting. Applicant amends

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Claims 31, 33, 37, 38, 40, 41, 45 and 46 to depend on Claim 35. Applicant asserts that these claim amendments overcome the rejection under the doctrine of obviousness-type double patenting and requests its withdrawal.

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**CONCLUSION**

Applicant is of the opinion that the Final Office Action has been completely responded to and that the application is now in condition for allowance. Such action is respectfully requested. No additional fees are believed due, however, the Commissioner is hereby authorized to charge any deficiencies that may be required or credit any overpayment to Deposit Account Number 11-0855.

If the Examiner believes any informalities remain in the application that may be corrected by Examiner's Amendment, or there are any other issues that can be resolved by telephone interview, a telephone call to the undersigned at (404) 815-6102 is respectfully solicited.

Respectfully submitted,



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